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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,066	11/03/2003	David Alan Burton	END9-2002-0013US1	3719
45216	7590	06/02/2006	EXAMINER	
KUNZLER & ASSOCIATES 8 EAST BROADWAY SUITE 600 SALT LAKE CITY, UT 84111				PEUGH, BRIAN R
		ART UNIT		PAPER NUMBER
		2187		

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/700,066	BURTON ET AL.
	Examiner	Art Unit
	Brian R. Peugh	2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 15 March 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-30 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is in response to applicant's communication filed March 15, 2006 in response to PTO Office Action dated December 16, 2005. The applicant's remarks and amendment to the specification and/or claims were considered with the results that follow.

Claims 1-30 have been presented for examination in this application. In response to the last Office Action, claims 1, 4, 6, 9-12, 14, 19, 21, and 24 have been amended.

Please notice the change in Examiner assigned to the current Application.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, claim 1 recites that the synchronous operation must complete prior to writing the write data to the target volume. The Applicant indicated in the March 15, 2006 response that support for this

limitation is found in paragraphs 18 and 57. However, the Examiner has been unable to locate the support for the claim limitation in not only paragraphs 18, 57, and 69, but also Applicant's Specification in it's entirety. Paragraphs 18, 57, and 69 do not recite language directed towards the synchronous operation must complete before the write data is written to the target volume. Rather, paragraphs 18, 57, and 69 recite the lock operation and feedback limitations.

Also claim 4 has been amended according to a "...lock operation comprising a lock command", which Applicant has indicated has support for the limitation in paragraph 18 of the Specification. However, paragraph 18 of the Specification recites that the lock command is performed *in conjunction* with the lock operation, not that the lock operation comprises the lock command.

Claim 6 has been amended to recite that the storage controller repetitively attempts to execute the lock command, which Applicant has indicated has support for the limitation in paragraph 67 of the Specification. However, there is no teaching in paragraph 67, or Applicant's Specification as a whole, for the newly amended claim subject matter.

Claim Rejections - 35 USC § 103

It is noted that the applicant uses the language “configured to”. This can be interpreted such that the reference does not actually need to perform the task as long as it would be capable of performing the task. If the applicant intends for the claims to be absolute, it is recommended that the claims be amended to delete “configured to”.

Claims 14, 15, 17-25, and 27-30 are rejected under 35 U.S.C. 103(a) as being obvious over applicant's admitted prior art (AAPA) in view of Shoens et al. (U.S. Pat. 4,965,719).

Claims 14, 15 and 17-20

Claims 14-20 disclose the method that the system of claims 1-11 is configured to perform. The combination of prior art applied to claims 1-11 discloses the system performing this method, therefore the prior art also discloses the method and is applied to claims 14-20 as follows.

Claim 14

AAPA discloses a method for speculative data mirroring, the method comprising:
Inserting data into a rollback log, the data corresponding to a write operation to a storage region within a source volume (**¶10, Lines 2-5**); and
initiating a synchronous operation on a corresponding storage region within a target volume (**¶12, Lines 1-2**).

AAPA does not disclose expressly sending the data corresponding to the write operation to the target volume without waiting for feedback regarding the synchronous operation.

Shoens et al. disclose a resource lock manager that uses an asynchronous locking strategy such that the processing of a resource lock request is overlapped with the processing incidental to accessing the resource (**Abstract; Col. 4, Lines 59-64**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to incorporate asynchronous locking into a remote mirroring system.

The motivation for doing so would have been increasing throughput associated with the system (**Shoens et al., Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 14.

Claim 15

AAPA further discloses wherein initiating a synchronous operation comprises sending a lock command to the target volume (**¶12, Lines 1-2**).

Claim 17

AAPA does not disclose expressly wherein inserting data into the rollback log further comprises inserting a lock command into the rollback log.

Shoens et al. disclose wherein a queue is maintained for storing pending lock requests until they are processed (**Col. 8, Line 61; Col. 9, Lines 5-6**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of Yanai et al. and Shoens et al. before them, to store lock commands in a log until they have been processed.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 17.

Claim 18

AAPA does not disclose expressly wherein the method further comprises removing the lock command from the rollback log in response to successful execution of the lock command on the target volume.

Shoens et al. discloses wherein a lock request is placed in a queue until it is processed (**Col. 9, Lines 61-64**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of Yanai et al. and Shoens et al. before them, to incorporate logging of lock commands so that the command is placed in a log until it has been processed, at which time it is removed.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 18.

Claim 19

AAPA does not disclose expressly wherein the method further comprises halting transmission of the data corresponding to the at least one write operation in response to rejection of the synchronous operation.

Shoens et al. disclose halting a transaction in response to a lock request being rejected (**Col. 9, Lines 25-29**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to halt the execution of a transaction upon the rejection of a lock request associated with the transaction.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 19.

Claim 20

AAPA does not disclose expressly wherein the method further comprises resuming transmission of the data stored in the rollback log in response to successful execution of the lock operation.

Shoens et al. disclose resuming a transaction after it had been previously suspended due to rejection of a lock request (**Col. 9, Lines 30-42**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to resume a suspended transaction upon successful execution of a lock request associated with the transaction.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 20.

Claim 21

It is noted that in the claim, the applicant uses "means", however the applicant does not recite "means for", and therefore the examiner has not interpreted the claim as invoking 112, 6th paragraph (means plus function). Based on the interpretation, claim 21 has the same scope as claim 14 and is rejected using the same arguments as applied to claim 14 above.

Claim 22

AAPA discloses a system for speculative data mirroring, the system comprising:

a source storage controller (Fig. 1, Item 114a) operably connected to a source volume (Fig. 1, Items 130a);

a target storage controller (Fig. 1, Item 114b) operably connected to a target volume (Fig. 1, Items 130b);

a rollback log configured to receive data corresponding to a write operation to a storage region within the source volume (¶10, Lines 2-5);

a storage control module operably connected to the target storage controller, the storage module configured to initiate a synchronous operation on a corresponding storage region within the target volume [(¶12, Lines 1-2); **AAPA discloses the source storage controller connected to the target storage controller and the source storage controller being able to initiate a lock operation, which is a synchronous operation, on a storage region within the target volume. Therefore, the source storage controller functions as the storage control module**].

Claim 23

AAPA discloses where the synchronous operation comprises a lock operation (¶12, Lines 1-2).

AAPA does not disclose expressly the system further comprising a mirror control module operably connected to the source storage controller, the mirror control module configured to send the data corresponding to the write operation to the target volume prior to receiving acknowledgement of the lock operation.

Shoens et al. disclose wherein a resource lock manager uses an asynchronous locking strategy such that the processing of a resource lock request is overlapped with the processing incidental to accessing the resource (**Abstract; Col. 4, Lines 59-64**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to incorporate asynchronous locking into a remote mirroring system.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 23.

Claims 24, 25 and 27-30

Claims 24-30 disclose a computer readable storage medium comprising a computer readable code for performing the steps of the method of claims 14-20. Claims 24-30 perform the steps of the method of claims 14-20 and that the system of claims 1-11 is configured for. Since the prior art applied to claims 1-11 is a computer system also configured to perform these steps, it must have a computer readable storage medium comprising a computer readable code to perform the steps, since a computer system cannot operate without a computer program. Therefore, claims 24-30 are rejected using the same arguments as applied to claims 1-11 and 14-20 as discussed below.

Claim 24

AAPA discloses a computer readable storage medium comprising computer readable program code for conduction a method of speculative data mirroring, the method comprising:

receiving into a rollback log data corresponding to a write operation, the write operation directed to a storage region within a source volume (**¶10, Lines 2-5**); and

initiating a synchronous operation on a corresponding storage region within a target volume (**¶12, Lines 1-2**).

AAPA does not disclose expressly sending the data corresponding to the write operation to the target volume prior to receiving acknowledgement of the synchronous operation.

Shoens et al. disclose a resource lock manager that uses an asynchronous locking strategy such that the processing of a resource lock request is overlapped (synchronous) with the processing incidental to accessing the resource (**Abstract; Col. 4, Lines 59-64**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to incorporate asynchronous locking into a remote mirroring system.

The motivation for doing so would have been increasing throughput associated with the system (**Shoens et al., Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 24.

Claim 25

AAPA further discloses wherein initiating a synchronous operation comprises sending a lock command to the target volume (**¶12, Lines 1-2**).

Claim 27

AAPA does not disclose expressly wherein inserting data into the rollback log further comprises inserting a lock command into the rollback log.

Shoens et al. disclose wherein a queue is maintained for storing pending lock requests until they are processed (**Col. 8, Line 61; Col. 9, Lines 5-6**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of Yanai et al. and Shoens et al. before them, to store lock commands in a log until they have been processed.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 27.

Claim 28

AAPA does not disclose expressly wherein the method further comprises removing the lock command from the rollback log in response to successful execution of the lock command on the target volume.

Shoens et al. discloses wherein a lock request is placed in a queue until it is processed (**Col. 9, Lines 61-64**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of Yanai et al. and Shoens et al. before them, to incorporate logging of lock commands so that the command is placed in a log until it has been processed, at which time it is removed.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 28.

Claim 29

AAPA does not disclose expressly wherein the method further comprises halting transmission of the data corresponding to the write operation in response to rejection of the lock operation.

Shoens et al. disclose halting a transaction in response to a lock request being rejected (**Col. 9, Lines 25-29**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to halt the execution of a transaction upon the rejection of a lock request associated with the transaction.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 29.

Claim 30

AAPA does not disclose expressly wherein the method further comprises resuming transmission of the data stored in the rollback log in response to successful execution of the lock operation.

Shoens et al. disclose resuming a transaction after it had been previously suspended due to rejection of a lock request (**Col. 9, Lines 30-42**).

AAPA and Shoens et al. are analogous art because they are from a similar problem solving area of improving efficiency of resource locking.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of AAPA and Shoens et al. before them, to resume a suspended transaction upon successful execution of a lock request associated with the transaction.

The motivation for doing so would have been increasing throughput associated with the system (**Abstract**). Therefore, it would have been obvious to combine Shoens et al. with AAPA for the benefit of increased throughput to obtain the invention as specified in claim 30.

Claims 16 and 26 are rejected under 35 U.S.C. 103(a) as being obvious over AAPA in view of Shoens et al. as applied to claims 1, 14 and 24 above and further in view of Yanai et al. (U.S. Pat. 5,742,792).

Claims 16 and 26

The combination of AAPA and Shoens et al. do not disclose expressly wherein the mirror control module is further configured to remove the data corresponding to the at least one write operation from the rollback log in response to successfully writing the data to the target volume.

Yanai et al. disclose removing the data corresponding to a write operation from a log in response to acknowledgement from the target device that the data has been written in the target device (**Col. 3, Lines 2-11**).

The combination of AAPA and Shoens et al. and Yanai et al. are analogous art because they are from the same field of endeavor of remote data mirroring.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of the combination of AAPA and Shoens et al. and Yanai et al. before them to incorporate removing data from a log upon acknowledgement of the data being written to a target storage device.

The motivation for doing so would have been improved performance of data transfer between data storage devices (**Col. 2, Lines 19-26**).

Therefore, it would have been obvious to combine Yanai et al. with the combination of AAPA and Shoens et al. for the benefit of improved data transfer performance to obtain the invention as specified in claims 8, 16 and 26.

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being obvious over Yanai et al. (U.S. Pat. 5,742,792) in view of Shoens et al.

Claim 12

Yanai et al. disclose an apparatus for bidirectional speculative data mirroring, the apparatus comprising:

a first storage control module (**Fig. 1, Item 16**);

a second storage control module (**Fig. 1, Item 44**);

a first mirror control module (**Fig. 1, Item 16**);

a second mirror control module (**Fig. 1, Item 44**).

Note that the mirror control module is the same as the storage control module as the single element controls both storage operations to the local device and the mirroring operations to the remote device.

Yanai et al. do not disclose expressly wherein the storage control modules are configured to conduct synchronous and lock operations or wherein the mirror control modules are configured to initiate a lock operation on a storage region and further

configured to send data corresponding to at least one write operation to the storage volume without waiting for feedback regarding the lock operation on the storage volume.

Shoens et al. disclose a resource lock manager that uses an asynchronous locking strategy such that the processing of a resource lock request is overlapped with the processing incidental to accessing the resource (**Abstract; Col. 4, Lines 59-64**).

Yanai et al. and Shoens et al. are analogous art because they are from a similar problem solving area of improving throughput associated with data processing in storage devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of Yanai et al. and Shoens et al. before them, to incorporate asynchronous locking into a remote mirroring system.

The motivation for doing so would have been increasing throughput associated with the system (**Shoens et al., Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with Yanai et al. for the benefit of increased throughput to obtain the invention as specified in claim 12.

Claim 13

Yanai et al. discloses the system further comprising a first rollback log configured to receive data corresponding to the at least one write operation to the first storage volume and a second rollback log configured to receive data corresponding to the at least one write operation to the second storage volume (**Col. 2, Line 66 – Col. 3, Line 2**).

Yanai et al. do not disclose expressly wherein the synchronous storage operations comprise a lock operation.

Shoens et al. disclose a resource lock manager that uses an asynchronous locking strategy to manage access to shared data (**Abstract; Col. 4, Lines 59-64**).

Yanai et al. and Shoens et al. are analogous art because they are from a similar problem solving area of improving throughput associated with data processing in storage devices.

At the time of the invention it would have been obvious to a person of ordinary skill in the art, having the teachings of Yanai et al. and Shoens et al. before them, to incorporate asynchronous locking into a remote mirroring system.

The motivation for doing so would have been increasing throughput associated with the system (**Shoens et al., Abstract**).

Therefore, it would have been obvious to combine Shoens et al. with Yanai et al. for the benefit of increased throughput to obtain the invention as specified in claim 13.

Response to Arguments

Applicant's arguments filed March 15, 2006 have been fully considered but they are not persuasive.

Regarding Applicant's argument on page 16, para [020] of the March 15 response, Applicant's prior art teaches the subject matter as claimed. More specifically, the rollback log is attributed to the buffer of paragraph [0012], which is used to receive

write data corresponding to a write operation to a storage region. Also, paragraphs [021] through [024], indicate Applicant's assertion that the prior art and Shoens reference do not teach speculative write operations or speculative data mirroring operations. However, as seen in claim 1 for example, the only limitation drawn to "speculative" data mirroring or write operations is found in the first line of the preamble, and as such is not given patentable weight due to the lack of correspondence between the preamble recitation and any limitation found in the body of the claim. Furthermore, paragraph [020], lines 8-9 recites that "...Shoens does not disclose a method that allows multiple concurrent writes or that allows prospective writes prior to the granting of a write lock". As noted above, prospective writes had not been claimed by claim 1. Also, as seen in paragraph [024], identifies the significance of the rollback log (backing the write out, etc.) although claim 1 fails to recite such limitations.

Paragraphs [026] and [027] also recite the use of prospective writes, although such limitations had not been made in claim 1.

Paragraphs [028] – [032] recite Applicant's assertion that the rollback log as claimed does not correspond to the buffer of Applicant's prior art of paragraph [0012], in that the rollback log is used for backing out data already written to a hard drive. The Examiner disagrees. Limitations directed towards backing out data had not been attributed to claim 1. The abstract recites that the rollback log "...receives write data corresponding to a write operation", which corresponds to the claimed subject matter. Paragraph [031] recites that the "...transmission buffer contains no teachings suggesting that the buffer may be used for backing out data already written to a source

volume". Claim 1 does not recite limitations directed towards such features. The Examiner disagrees with Applicant's assertion of paragraph [032], in that the Examiner believes that the transmission buffer of Applicant's background reads upon the claimed subject matter of claim 1 attributed to the rollback buffer.

The above arguments are also attributed to Applicant's response of paragraphs [036] and [037], as well as Applicant's arguments directed towards the remaining rejections of 11-13, 16, and 26, found in paragraphs [038] through [043].

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

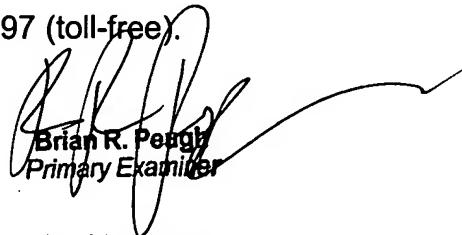
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Peugh whose telephone number is (571) 272-4199. The examiner can normally be reached on Monday-Thursday from 7:00am to 4:30pm. The examiner can also be reached on alternate Friday's from 7:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks, can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian R. Peugh
Primary Examiner

Art Unit 2187
May 29, 2006